

Title 26
DEPARTMENT OF THE ENVIRONMENT
**Subtitle 04 REGULATION OF WATER SUPPLY,
SEWAGE DISPOSAL, AND SOLID WASTE**

**Chapter 02 Sewage Disposal and Certain Water Systems for Homes
and Other Establishments in the Counties of
Maryland Where a Public Sewage System is Not
Available**

Authority: Environment Article, §§9-216, 9-217, 9-223, 9-252,
10-103, 10-301, and 10-304, Annotated Code of Maryland

.01 Definitions.

- A. The following terms have the meanings indicated.
- B. Terms Defined.

(1) "Aerobic treatment" means a method which utilizes the principle of oxidation in the decomposition of sewage by introduction of air into the sewage or by surface adsorption of air for a sufficient length of time to effect treatment through aerobic bacterial action.

(2) "Approving Authority" means the Secretary of the Environment or the Secretary's designee.

(3) "Aquifer" means any formation of soil, sand, rock, gravel, limestone, sandstone, or other material, or any crevice from which underground water is or may be produced.

(4) "Chemical toilet" means a toilet arranged to receive the nonwater-carried human waste directly into a deodorizing and liquefying chemical in a watertight tank.

(5) "Cistern" means a covered tank in which rain water from roof drains is stored for household or other purposes.

(6) "Community sewerage system" means any system, whether publicly or privately owned, serving two or more individual lots for the collection and disposal of sewage combined with industrial waste, including various devices for the treatment of that sewage.

(7) "Community water supply system" means a source of water and distribution system, including treatment facilities and storage facil-

ities whether publicly or privately owned, serving two or more individual lots.

(8) "Confined aquifer" means an aquifer bounded above and below by beds of distinctly lower permeability than that of the aquifer itself and which contains ground water under pressure greater than that of the atmosphere. This term is synonymous with the term "artesian aquifer".

(9) "Contamination" means the introduction into water of any substance, which may transfer infectious agents or other foreign substances (organic, inorganic, radiological, or biological), in concentrations which may constitute a health hazard or impair the usefulness of the water.

(10) "Controlled hazardous substance" means a substance identified as a hazardous substance by the Department of the Environment pursuant to Environment Article, Title 7, Subtitle 2 (COMAR 26.13.01.03B(26)).

(11) "Conventional on-site sewage disposal systems" are those systems in use which meet current regulations and consist of a septic tank or aerobic treatment with standard trench or deep trench subsurface irrigation or seepage pit on-site disposal or sand mound system.

(12) "County water and sewer plan" means a comprehensive plan and all amendments and revisions of it as required by Environment Article, Title 9, Subtitle 5, Annotated Code of Maryland, for the provision of adequate water supply systems, on-site sewerage and solid waste disposal systems, and solid waste acceptance facilities, throughout the county, whether publicly or privately owned, to include all towns, municipal corporations, and sanitary districts in the county.

(13) "Deep trench" means a trench having perforated or openjointed pipe or tile trench in which the trench side wall and bottom area is used to calculate the absorptive area in the system design. At least 2 inches of gravel/stone covers the pipe and extends throughout the depth of absorptive side wall to the trench bottom.

(14) "Domestic sewerage" means the liquid or water carried wastes derived from dwellings, including floating homes, business buildings, institutions, and the like, exclusive of wastes derived from industrial processes.

(15) "Floating home" means any vessel, whether self-propelled or not, which is:

(a) Used, designated, or occupied as a permanent dwelling unit, place of business, or for any private or social club, including a structure constructed upon a barge primarily immobile and out of navigation or any structure which functions substantially as a land structure while the same is moored or docked within Maryland; and

(b) Which has a volume coefficient greater than 3,000 square feet based upon the ratio of the habitable space of a vessel measured in cubic feet and the draft of a vessel measured in feet of depth.

(16) "Fall line" means the contact between the unconsolidated sediments of the coastal plain physiographic province and the crystal. line rocks of the Maryland Piedmont physiographic province (see the map of "Maryland Physiographic Provinces and Their Divisions" in this chapter), and is approximated by the line connecting the numerous waterfalls and rapids in adjacent streams.

(17) "Flood plain soils" are those soils that are listed in the soil survey as either having a flood hazard or being susceptible to flooding.

(18) "Grease interceptor" means a receptacle designed to collect and retain grease and fatty substances normally found in kitchen or similar wastes.

(19) "Ground water" means underground water in a zone of satu. ration.

(20) "Hazardous substance" means any matter:

(a) That conveys toxic, lethal, or sublethal effects to plant; aquatic, or animal life, or which may be injurious to human health, or persists in the environment; or

(b) Which causes sublethal alterations to aquatic, plant, animal, or human systems through their cumulative or immediate reactions.

(21) "Holding tank" means a watertight receptacle which is used, or intended to be used, for the collection of sewage.

(22) "Liquid waste hauler" means a person engaged in the business of cleaning and emptying septic tanks, holding tanks, seepage pits, privies, or any other on-site disposal facility.

(23) "Mobile home" means a structure that can be used with or without a permanent foundation, is transportable in one or more sections, built on a permanent chassis, and is designed to be used as a dwelling when connected to the required utilities.

(24) "Mound system" means an on-site sewage disposal system utilizing a raised bed of sand fill with a distribution system con-

26.04.02.01 ENVIRONMENT

structed so as to distribute sewage equally over the ground surface located under the base of the mound.

(25) "Non-conventional on-site sewage disposal systems" are experimental systems and innovative technologies not currently described in these regulations, that are **undergoing evaluation by the** Department of the Environment and the Approving Authority.

(26) "On-site disposal" means the disposal of sewage effluent beneath the soil surface.

(27) "On-site sewage disposal system" means a sewage treatment unit, collection system, disposal area, and related appurtenances.

(28) "Percolation test" means a procedure used to determine the percolation rate.

(29) "Permeability" means the capability of a rock, aquifer, or confining bed to transmit waters or air.

(30) "Person" means an individual, partnership, firm, corporation, cooperative enterprise, or a governmental agency. (31) "Pollution" means any contamination or other alteration of the physical, chemical, or biological properties of any ground or surface waters of this State, including a change in temperature, taste, color, turbidity, or odor of the waters or the discharge or deposit of any organic matter, harmful organism, or liquid, gaseous, solid, radioactive, or other substance onto the ground surface or into any waters of this State that will render the ground or waters harmful or detrimental to:

(a) Public health, safety, or welfare;

(b) Domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses;

(c) Livestock, wild animals, or birds; or

(d) Fish or other aquatic life.

(32) "Potable water" means water which is free from substances or agents which may cause disease or harmful physiological effects, with the bacteriological and chemical quality conforming to COMAR. 26.04.01 and 26.04.04.

(33) "Privy" means an earth or watertight pit or receptacle for receiving nonwater-carried human wastes over which is placed a privy house containing a seat or seats.

(34) "Seepage pit" means a dug or drilled hole extending into porous soils for the purpose of introducing sewage effluent into the ground.

(35) "Septic tank" means a watertight receptacle which receives the discharge of sewage from a building sewer or part of it and is designed and constructed to permit the settling and the digestion of the organic matter by an anaerobic bacterial action.

(36) "Sewage" means water-carried human, domestic and other wastes and includes all human and animal excreta.

(37) "Sewage treatment unit" means a device designed and constructed to receive sewage and to provide treatment to reduce organic and inorganic matter and includes septic tanks, aerobic treatment units, or any other approved devices.

(38) "Sewer" means a pipeline which carries sewage and is designed to exclude stormwater, surface water, and ground water.

(39) "Soil survey" means the scientific inventory of soil maps, soil unit descriptions, classification in the national system, and interpretation for use, as conducted by the National Cooperative Soil Survey by the United State's Department of Agriculture, Soil Conservation Service, in cooperation with the Maryland Agricultural Experiment Station.

(40) "Spring" means a source of water issuing from the ground, rock formation, fracture, onto the land, or into a body of water.

(41) "Standard trench" means a trench having at least 6 inches of gravel or stone beneath and at least 2 inches over the perforated or open jointed pipe or tile and is a trench in which only the bottom area is used to calculate the absorptive area in the system design.

(42) "Subsurface irrigation" (tile field) means the process of onsite sewage disposal in which the sewage effluent is applied to land by distribution beneath the surface through perforated or open jointed pipes, or tiles laid in trenches.

(43) "Unconfined aquifer" means an aquifer not bounded above by a bed of distinctly lower permeability than that of the aquifer itself and containing ground water under pressure approximately equal to that of the atmosphere. This term is synonymous with the term "water table aquifer".

(44) "Unconsolidated material" means uncemented soil and sediment material having not more than 70 percent coarse fragments

(greater than 2mm) by weight or 50 percent coarse fragments (greater than 2mm) by volume. Volume estimation shall be made by visual comparison with a standard chart.

(45) "Water supply system" means all sources of water which are or may be used as potable water and includes wells, springs, cisterns, or other sources and their appurtenances, such as, pitless adaptors, pumps, pressure tanks, water lines, and treatment and storage facilities.

(46) "Well" means any hole made in the ground to explore for ground water, to obtain or monitor ground water, or to inject water into any underground formation from which ground water may be produced.

.02 General Provisions.

A. The requirements of this chapter apply to new on-site sewage disposal systems, replacements, additions to existing systems, and any material changes in the use of a system.

B. On-Site Disposal System.

(1) Notwithstanding any other provision of this regulation, the Department may approve an on-site disposal system:

(a) For a lot which was approved by the Department of Health and Mental Hygiene as of November 17, 1985 if it met the Department's regulations and policies which were in effect on November 17, 1985 and has at least one replacement system area. However, if a lot was approved subject to a 10,000 square foot or greater disposal area, this disposal area shall be maintained.

(b) For a lot which was legally established without Department of Health and Mental Hygiene approval before November 18, 1985 if it meets the other requirements of this regulation, except that:

(i) Only area sufficient for an initial and one replacement system is required.

(ii) In counties where the Department of Health and Mental Hygiene or the Department of the Environment has allowed systems to be installed with less than a 4-foot treatment zone, these counties may continue to use less than a 4-foot treatment zone and less than 2 acres until the ground water protection reports are completed. These counties include Talbot, Dorchester, Wicomico, Worcester, Somerset, Caroline, Kent, and Queen Anne's. A maximum density requirement of 160 residences or its equivalent per square mile for ground water protection

shall apply in these areas for lots where direct ground water penetration was previously used.

(iii) For lots and parcels in the coastal plain for which countywide ground water protection reports are not to be prepared, or have as yet to be completed, the lot need not meet the 4-foot treatment zone or 2-acre minimum requirement for ground water protection if a hydrogeologic report is prepared for the area in question and the Department, upon review, determines that a variance can be granted without contaminating ground water.

(2) If, in the opinion of the Approving Authority, the lot cannot provide for a safe and adequate water supply and an on-site waste disposal system, a permit shall be denied.

C. Variances for existing lots or parcels may be granted to the minimum 2-acre lot size requirement in Regulation .04K if it can be determined that a lot will provide for a safe and adequate water supply and sewage disposal system which will not impact reservoirs and streams used as potable water supplies.

D. A person may not construct or alter any residence, floating home, or commercial establishment served or to be served by an onsite sewage disposal system or private water supply system, and a county or municipality may not issue, if applicable, a building permit for the desired new construction or alteration, until the Approving Authority has:

(1) Issued both an on-site sewage disposal permit and a well construction permit for facilities served by an on-site sewage disposal system and a private water supply system;

(2) Issued an on-site sewage disposal permit for facilities served by an on-site sewage disposal system and a public water supply system;

(3) Issued a well construction permit for facilities served by a private water supply system and public sewerage; or

(4) Certified the existing on-site sewage disposal and water supply systems as capable of handling the existing sewage flows or water demand and any reasonable foreseeable increase in **sewage flows or water** demand.

E. A person may not dispose of sewage, body, or industrial wastes in any manner which may cause pollution of the ground surface, the waters of the State, or create a nuisance.

F A person may only dispose of sewage, body, or industrial wastes in accordance with an approved on-site sewage disposal permit or other method of disposal approved by the Approving Authority.

G. Water Supply for Non-Community System.

(1) Only the following shall be used as a water supply for residential and other establishments not served by a community system:

(a) Wells approved by COMAR 26.04.04;

(b) Surface water systems which are approved and permitted by the Department of the Environment and which meet the requirements of COMAR 26.04.01.

(2) Springs are not to be used as a water supply for a new homesite.

(3) Cisterns may not be used as a potable water supply.

H. Building and floating home contractors, septic contractors, plumbers, licensed well drillers, drivers, and diggers, along with any person for whom the work is being performed, shall be responsible for compliance with these regulations and COMAR 26.04.04.

I. Application for an on-site sewage disposal permit shall be in a form required by the Approving Authority and shall include a site plan, which identifies percolation and other test locations, proposed system design, and the location of existing and proposed wells to serve the property, along with any relevant datum concerning wells or disposal systems within 100 feet of the property line, and any additional information the Approving Authority may request.

J. An on-site sewage disposal permit may not be issued unless the project is in conformance with the approved county water and sewer plan.

K. Percolation testing and methodology shall be conducted under the supervision of the Approving Authority. Other pertinent soil evaluations may be conducted under the supervision of the Approving Authority when considered necessary.

L. The Approving Authority shall issue a permit for an on-site sewage disposal system if it determines that the site and proposed design can safely dispose of sewage and conform with applicable laws and regulations. When a permit is denied, the applicant shall be notified in writing within 30 days as to the reason for denial.

M. A person may not construct or attempt to construct an on-site sewage disposal system without first receiving a permit from the Approving Authority. A person may not alter an on-site sewage disposal system or cause it to receive any increase in flow unless permitted by the Approving Authority.

N. The permit to construct an on-site sewage disposal system is not valid for more than 2 years from the date of issuance, but may be renewed at the discretion of the Approving Authority. Additional testing or evaluations, before the renewal of a permit, may be required by the Approving Authority.

O. No part of an on-site sewage disposal system may be covered or used until it has been inspected and approved by the Approving Authority.

P. When hydrologic or geologic problems exist, the Approving Authority may require installation, inspection, and approval of the on-site sewage disposal system before issuance of the building permit by the local agency issuing building permits.

Q. All excavations shall be backfilled as soon as possible. Excavations which are required to be left open shall be properly protected by the excavator to prevent injury to humans and animals.

R. Every person engaged in the business of removing and disposing of the solid and liquid contents of on-site sewage disposal systems shall obtain an annual permit from the Approving Authority.

S. The permits required by this regulation. shall be in addition to any approval to subdivide land pursuant to COMAR 26.04.03.

T. Sewage or sewage effluent, treated or non-treated, may not be disposed of in any manner that will cause contamination of potable water supply systems, and waters of the State, or create a nuisance, except as specified in Regulation .04C.

.03 Conventional On-Site Sewage Disposal Systems.

A. When a community sewerage system is adequate and economically available to the building to be served, the Approving Authority may require a connection to the public system.

B. Holding tanks may be used to resolve existing on-site sewage disposal failures when community sewer facilities are not available or onsite repair is not possible. They may not be permitted to serve new construction or for the purpose of adding capacity to an existing disposal system in order to accommodate a change in property use. They may be permitted to serve essential public buildings as determined by the Approving Authority and the Department of the Environment on a case-by-case basis. The permission to allow a holding tank for an essential public service building shall include consideration of the following.

(1) Whether the proposed building is directly related to and necessary to protect the public safety;

(2) Whether the proposed building will supply any critical public service;

(3) The volume and character of the waste to be generated, and, its ultimate disposal; and

(4) The expected length of time the holding tank will be in service before a conventional disposal mode is available.

C. Holding tanks shall be sized to hold a minimum of 7 days effluent from the septic tank and shall be of watertight construction. The contents shall be regularly removed and disposed of as provided in this regulation. The applicant shall submit, along with the application, a maintenance contract acceptable to the Approving Authority which shall include an acceptable pumping schedule between the applicant and an approved liquid waste hauler. The Approving Authority may issue the on-site sewage disposal permit if it is determined that the issuance of the permit would be consistent with the requirements of this section and that the maintenance contract reasonably appears to provide for safe and adequate disposal of sewage to be generated, and does not otherwise prejudice the public health.

D. An on-site sewage disposal system may not serve more than one building unless specifically authorized by the Approving Authority.

E. When water under pressure is not available, all human body wastes shall be disposed of in approved privies, chemical toilets, or any other installations acceptable to the Approving Authority. These methods may not be authorized for new construction.

.04 Site Evaluation Criteria.

A. On-Site Sewage Disposal Permit.

(1) In determining whether or not to issue an on-site sewage disposal permit, the Approving Authority shall review the appropriateness and design of the proposed system. The review shall include consideration of the following:

(a) The general topography, geology, soil classification, and hydrology;

(b) Surface and subsurface drainage conditions;

(c) Soil descriptions, tests and borings;

(d) Requirements for seasonal testing,

(e) History of septic systems and wells in the area and the potential impact of new on-site sewage disposal systems on individual water well supplies in adjacent areas.

(2) The applicant shall be responsible for submitting or making available all soils information, design specifications and other data as may be required by the Approving Authority to complete its permit review responsibilities.

B. Soil Test. In areas where the soil survey maps or soil borings indicate moderate or severe limitations based on seasonally perched or seasonally high water tables, soil percolation tests and any other tests as may be required shall be performed at the time of the year when the highest water table can be expected at the on-site sewage disposal area. All soil tests shall be conducted at the depth and in the soil intended to be used for the on-site system. The following documents have previously been incorporated by reference under COMAR 15.01.05.03. They are available for review at each county soil conservation district office. These documents are:

- (1) Soil Survey Map of Allegany County;
- (2) Soil Survey Map of Anne Arundel County; (3) Soil Survey Map of Baltimore County;
- (4) Soil Survey Map of Calvert County;
- (5) Soil Survey Map of Caroline County; (6) Soil Survey Map of Carroll County;
- (7) Soil Survey Map of Cecil County;
- (8) Soil Survey Map of Charles County;
- (9) Soil Survey Map of Dorchester County;
- (10) Soil Survey Map of Frederick County; (11) Soil Survey Map of Garrett County; (12) Soil Survey Map of Harford County; (13) Soil Survey Map of Howard County; (14) Soil Survey Map of Kent County;
- (15) Soil Survey Map of Montgomery County;
- (16) Soil Survey Map of Prince George's County; (17) Soil Survey Map of Queen Anne's County;
- (18) Soil Survey Map of St. Mary's County;

- (19) Soil Survey Map of Somerset County;
- (20) Soil Survey Map of Talbot County;
- (21) Soil Survey Map of Washington County;
- (22) Soil Survey Map of Wicomico County; and
- (23) Soil Survey Map of Worcester County.

C. Soil Treatment Zones.

(1) Conventional on-site disposal systems may not be approved where there is less than 4 feet unsaturated, unconsolidated material sufficient to attenuate effluent below the bottom of the on-site sewage disposal system except as provided in §C(2) and Regulation .06. If the 4-foot treatment zone contains rock fragments which exceed 50 percent by volume, lots may be approved for sewage disposal if a percolation test conducted in this zone is not faster than 1 inch in 2 minutes.

(2) In the coastal plain province where 4 feet of unsaturated, unconsolidated material sufficient to attenuate effluent below the bottom of the on-site sewage disposal system is not available, the Approving Authority may identify areas where on-site sewage disposal systems using less than 4 feet of unsaturated soil may be allowed, if

(a) The aquifer had been designated as Type III (other than Type I or Type II), pursuant to COMAR 26.08.01-.04; or

(b) The aquifer has limited potential to serve as a drinking water source. These aquifers shall meet one or more of the following conditions:

(i) Insufficient potable water to serve as a year-round supply due to seasonally fluctuating water tables;

(ii) Interconnection with tidewater such that if pumped for water supply, brackish water or saltwater intrusion into the aquifer has or would occur;

(iii) Evidence the aquifer has already been polluted by, or is in imminent danger of being polluted by, activities in the area.

(3) The following conditions are required for all areas in which aquifers have been designated, pursuant to §C(2), for installation of onsite sewage disposal systems using less than 4 feet of unsaturated soil below the bottom of the sewage disposal field or pit:

(a) These areas shall be delineated in a ground water protection report prepared by the county government or their representative and approved by the county health department and the report shall be in

cluded in the appropriate county water and sewer plan and approved by the Department of the Environment. The report shall set density, design, and construction requirements to minimize degradation of aquifers designated for discharge and justify any variances to §C(3)(b)-(g) of these regulations. The report will be submitted to the Department of the Environment within 6 months of the effective date of this regulation. Extensions to the 6-month time requirement for submittal of ground water protection reports may be granted by the Department of the Environment upon receiving written requests from the county government.

(b) A quantitatively and qualitatively superior potable water supply is available from one or more deeper confined aquifers which are separated from the disposal aquifer by a confining aquiclude.

(c) Steps are taken by the county health department to ensure that the aquifer designated for waste disposal is not currently and will not be used for a potable water supply.

(d) Discharge to a surficial aquifer will not contaminate a deeper aquifer of Type I or II, pursuant to COMAR 26.08.01-.04, or any aquifer used for water supply.

(e) Water supply wells tapping confined aquifers beneath the disposal aquifer shall be grouted through the disposal aquifer.

(f) The on-site sewage disposal system and recovery area is located 100 feet from any well in a confined aquifer.

(g) Unimproved lots served by these on-site sewage disposal systems shall be not less than 2 acres in size.

D. Approvals for lots in the Appalachian physiographic province of the State (see the map of "Maryland Physiographic Provinces and Their Divisions" in this chapter), where 4 feet of unsaturated, unconsolidated soil sufficient to attenuate effluent below the subsurface disposal system is not available, may require concurrent approval of the Department of the Environment at the discretion of the Division of Residential Sanitation. Training and assistance by the Division of Residential Sanitation personnel will be provided at the request of the Approving Authority. In limestone or dolomite areas of the Appalachian physiographic province, deviation from the 4-foot requirement may not be given for new development.

E. The Approving Authority may not permit any on-site disposal systems to be installed when, in his opinion, it may pollute well water

supplies, water supply reservoirs, shellfish growing waters, bathing beaches, lakes and tidewater areas.

F. The disposal and two recovery areas for an individual lot, established and approved after adoption of this regulation, may not be less than 10,000 square feet and shall meet all physical and distance requirements outlined in Regulations .03 and .04. The 10,000 square-foot area shall be exclusive of buildings, easements, rights-of-way, and any other permanent or physical objects.

G. The Approving Authority in determining estimated daily flows for institutional and commercial establishments shall use the best available water usage information.

H. If, in the opinion of the Approving Authority, a safe and adequate water supply is not available to the lot, an on-site sewage disposal permit shall be denied.

I. An on-site disposal system and recovery area may not be located in flood plain soils or on slopes in excess of 25 percent.

J. The following horizontal separation distances shall be maintained between the on-site disposal system plus recovery area and the features listed although greater distances may be required at the discretion of the Approving Authority:

(See page 213)

<i>Feature</i>	<i>Separation Distance</i>
(1) Steep slopes (>25 percent)	25 feet
(2) Drainage and spring seeps	25 feet
(3) Drainage ways and gullies	25 feet
(4) Flood plain soils	25 feet
(5) flock outcrops	25 feet
(6) Elevation of spillway crest water level in a water supply reservoir	300 feet
(7) Stream bank 3,000 feet or less upstream from a water intake on a water supply reservoir or intake on a stream used as a potable water supply	200 feet
(8) Stream bank greater than 3,000 feet upstream from a water intake on a water supply reservoir or intake on a stream used as a potable water supply	100 feet
(9) Water bodies not serving as potable water supplies	100 feet
(10) Water well system in unconfined aquifers	100 feet
(11) Water well system in confined aquifers	50 feet

K A lot located within 2,500 feet of the normal water level of existing or proposed water supply reservoirs, measured horizontally or within a 5,000-foot radius upstream from the water intake on streams used as potable water supply sources and a 5,000-foot radius of water intake located within a reservoir shall have an area of not less than 2 acres with a minimum width of 175 feet. An on-site sewage disposal system may not be located within 300 feet, measured horizontally, of the normal high water level of a water supply reservoir. Normal water level shall be the elevation of the spillway crest. These limitations do not apply to areas below the dam forming the reservoir.

.05 Design and Construction of Conventional On-Site Sewage Disposal Systems.

A. Sewage from bathrooms, kitchens, laundry fixtures, and other household plumbing shall receive adequate treatment from a sewage treatment unit before the effluent is discharged to an approved on-site sewage disposal area.

B. On-site sewage disposal systems and recovery areas shall be at least 100 feet removed from any water well system in unconfined aquifers and 50 feet from any water well system in confined aquifers.

C. On-site sewage disposal systems shall be located downgrade from private water supplies. A variance to this requirement may be granted by the Department of the Environment after consideration of the hydrogeologic conditions and recommendations of the Approving Authority.

D. Grease interceptors shall be required on separate kitchen waste drains from restaurants and other establishments discharging grease.

E. Residential Septic Tank Criteria. All on-site sewage disposal systems serving a residential use shall be sized in accordance with the following criteria and tables. This table provides for use of garbage disposal units, automatic clothes washers, and other household appliances.

Septic Tank Criteria

<i>Number of Bedrooms</i>	<i>Minimum Septic Tank Capacity Below Outlet</i>
2 or less	750 gallons
3	1,000 gallons
4	1,250 gallons
For each additional bedroom, add 250 gallons.	

F. Septic tanks shall be made of materials and constructed in a manner acceptable to the Approving Authority.

G. Institutional Septic Tank Criteria. Minimum septic tank capacities for institutional or commercial installations shall be calculated according to the following criteria:

- (1) Flows of 1,500 gallons per day (gpd) or greater.

$$V = 1,125 \text{ gallons} - 0.75Q$$

where V = minimum septic tank volume

Q = estimated daily peak sewage flow;

- (2) Flows of less than 1,500 gallons per day (gpd):

$$V = 1.5 Q$$

H. Aerobic units may be used instead of septic tanks and shall be designed using maximum daily flows pursuant to §§E and F of this regulation. A reduction in lot size or absorption area requirements is

not allowed with their use. All aerobic units shall be made of materials and constructed in a manner acceptable to the Approving Authority.

I. Absorption Area Requirements for Individual Residences. Effective absorption area requirements for individual residences using standard trench or seepage pit disposal techniques are given in Table I. These absorption area requirements provide for garbage grinder and automatic clothes washing machines.

(1) Table I-Individual Residences.

<i>Percolation Rate in Minutes for 1" Drop, After Prewetting</i>	<i>Required Absorption Area (Square Feet Per Bedroom)</i>
2	85
3	100
4	115
5	125
6-10	165
11-15	190
16-30	250

(2) When a standard trench is used, there shall be at least 6 feet of undisturbed soil between 2-foot wide trenches and 9 feet between 3-foot wide trenches. Standard trenches shall be designed using the surface area of the trench bottom only. The minimum distance between seepage pits shall be equal to three times the diameter of the largest pit. Sizing for seepage pits determined by using Table I for residential and Table II for commercial or institutional use. Absorptive area is determined by acceptable side wall area. Bottom area and unacceptable side wall area is not used in the calculation of absorptive area design for seepage pits.

J. Absorption Area Requirements for Commercial and Institutional Establishments. Effective absorption area requirements for commercial and institutional establishments using standard trench or seepage pit disposal mode are calculated as follows:

26.04.02.05

ENVIRONMENT

(1) Table II-Commercial and Institutional Establishments.

<i>Percolation Rate in Minutes for 1" Drop, After Prewetting</i>	<i>Maximum Application (Gallons Per Square Ft. Per Day)</i>
2	3.5
3	2.9
4	2.5
5	2.2
10	1.6
15	1.3
30	0.9

(2) Absorptive area is calculated by using estimated daily flow and dividing it by the appropriate maximum application rate. Table II does not allow for wastes from garbage grinders or automatic washing machines. Discharge from these appliances requires additional absorptive area of 20 and 40 percent, respectively. Four hundred gallons, estimated sewage flow, per store shall be used as a minimum figure.

K. Deep Trench System.

(1) Approval of Deep Trench System. A deep trench system may be approved by the Approving Authority when sufficient soils are available to allow the use of side walls in determining minimum absorption area requirements.

(2) Calculation of required absorption area includes the following.

(a) The standard absorptive area for the desired use by reference to the appropriate table above;

(b) Depth of usable sidewall area on the basis of percolation tests, observation of the soil profile at various soil depths, and other hydrogeologic data as may be required by the Approving Authority;

(c) The width of trench in feet; and

(d) Percent of standard trench length by use of the following formula:

$$(i) \text{ Percent of Length of Standard Trench} = \frac{w + 2}{2d} \times 100$$

where w = width of trench in feet

d = depth of gravel in absorptive material below disposal pipe in feet.

(11) Minimum distance between trenches shall be two times the depth of gravel in the deepest trench or 18 feet, whichever is the lesser distance.

L. The Approving Authority may require that a multi-use-on-site sewage disposal system (5,000 gpd or more) incorporate dosing and resting features in their design and construction.

M. Maximum daily flows shall be used as the basis for system design regardless of the type of treatment unit or disposal method proposed.

N. Greater absorption area than provided for in this regulation may be required by the Approving Authority based on local conditions and experience.

O. Percolation Test. Percolation tests shall be conducted, and the results interpreted, in accordance with the following.

(1) An adequate number of percolation tests and other pertinent observations, as required by the Approving Authority, shall be conducted within the area designated for on-site sewage disposal so as to determine that the area is suitable for this purpose.

(2) The Approving Authority may require additional percolation testing where soil texture or structure varies or limiting geologic conditions are encountered, or when the Approving Authority deems it necessary to evaluate a larger disposal and recovery area for the estimated sewage flow.

(3) The minimum allowable percolation rate after prewetting is 1 inch per 30 minutes, except for systems approved under §Q of this regulation.

(4) A percolation rate faster than 2 minutes per inch, after prewetting, may not be approved west of the fall line and may also be disapproved east of the fall line when, in the opinion of the Approving Authority, adequate protection of the ground water may not be provided due to the rapid movement of water through the soil.

(5) A percolation rate of between 2 and 5 minutes per inch, after prewetting, may be grounds for disapproval if in the opinion of the Approving Authority adequate protection of the ground water may not be provided due to rapid movement of water through the soil.

P Fill material may not be used in conventional subsurface sewage disposal systems except as placed over the tile or perforated pipe.

Q. Mound Systems.

(1) Mound systems may be used only under the following conditions:

(a) Where ground water is located at least 2 feet below the ground surface and measured during the period of the highest water table;

(b) Where excessively permeable material or fractured bedrock is located at least 2 feet below the ground surface;

(c) Percolation rates measured after prewetting utilizing a method that measures vertical permeability are not faster than 1 inch per 2 minutes and not slower than 1 inch per 60 minutes; and

(d) The sewage disposal area has a slope of less than 12 percent.

(2) The Approving Authority may require greater depths than those specified in §Q(1)(a) and (b) of this regulation to ensure proper operation of mound systems where the Approving Authority determines that local conditions make greater depths necessary.

(3) Site evaluation and testing for a mound system shall be performed under the following conditions: '

(a) Tests shall be performed in the least permeable soil horizon which is located in the upper 24 inches of soil; and

(b) Tests shall be conducted with an apparatus which minimizes horizontal movement of water.

(4) Construction of mounds shall be in accordance with the following.

(a) The long axis of the mound and the trench or bed shall be perpendicular to the slope.

(b) All parts of a mound shall meet the horizontal separation distance in Regulation .04J.

(c) Mounds may not be constructed on heavily timbered sites where stumps may interfere with preparation of the basal area surface.

(d) A two compartment septic tank or two tanks in series shall be used for pretreatment.

(e) Mounds shall use a pressure distribution system which is designed to have a minimum pressure of 2 feet of head at the distal end.

(f) Pump Chambers and Equipment.

(i) The pump shall provide adequate capacity for handling peak flow at the design head. The design head shall include static head, friction head, and an additional 2 feet of discharge head.

(ii) The pump installation shall allow the sewage to drain back to the pumping chamber from the distribution system to prevent freezing. Use of check valves is not recommended.

(iii) The pump shall be of a type which can resist the corrosive effects of septic tank effluent.

(iv) A minimum of 6 inches shall be provided between the pump intake and the floor of the pumping chamber.

(v) The pumping chamber shall be constructed and located to prevent the entrance of surface water or ground water.

(vi) The dosing frequency shall be approximately six times a day.

(vii) The pumping chamber shall have a minimum of 1-day storage capacity of design flow above the high water alarm.

(viii) The pumping chamber shall have a high water alarm.

(ix) The pumping chamber shall provide adequate volume to store the sewage between doses.

(x) The pump control sensor shall be located so that it is not affected by flow entering the pump chamber.

(g) The distribution system shall be installed on a bed or in a series of trenches with at least 6 inches of gravel below the pipe.

(h) The gravel shall be free of fines and be between $\frac{3}{4}$ inch and 2 inches in size.

(i) Approximately 2 inches of gravel shall be placed above the distribution pipe.

(j) The gravel shall be covered with a geotextile filter fabric to prevent sand and fines from entering the gravel.

(k) The trench or bed shall be constructed so that the bottom of the trench or bed is level.

(l) The sand beneath the trench or bed shall be of an effective size between 0.25 and 0.5 mm and have uniformity coefficient of 3.5 or less.

26.04.02.05 ENVIRONMENT

(m) Holes in the distribution lines shall be free of burrs and other protrusions.

(n) The mound shall be covered with approximately a 4 to 6 inch layer of top soil and seeded.

(o) The mound side slopes may not exceed a 3 to 1 grade regardless of the natural slope of the ground.

(p) The top of the mound shall be crowned to allow rain water to run off.

(q) Settling problems shall be corrected when they are detected.

(5) Mounds shall be sized in accordance with the, following.

(a) The bed or trenches in the mound shall be sized to absorb not more than 1.2 gallons per square foot per day based on the bottom area of the beds or trenches.

(b) The mound shall have a basal area sized to absorb effluent in accordance with the following.

(i) For a vertical percolation rate of between 2 minutes per inch and 30 minutes per inch, not more than 1.2 gallons per square foot per day;

(ii) For a vertical percolation rate between 30 minutes per inch and 45 minutes per inch, not more than 0.75 gallons per square foot per day;

(iii) For a vertical percolation rate between 45 minutes per inch and 60 minutes per inch, not more than 0.5 gallons per square foot per day.

(c) The basal area includes only that area which is directly below the trenches or bed and that area which is downslope from the trenches or bed.

(d) The amount of sand fill below the trench or bed may not be less than 1 foot.

(e) The total distance from the bottom of the trench or bed to the high water table may not be less than 4 feet except when a lesser separation is approved pursuant to Regulation .04C(3)(a).

(6) Site Preparations.

(a) The site may not be compacted by earthmoving or other equipment.

(b) The site shall have the grass or other vegetation removed as much as possible.

(c) The soil shall be plowed to a depth of 6 inches perpendicular to the slope.

(d) Work may not be done during wet weather, during wet soil conditions, or during freezing and thawing conditions.

(e) _ Trees on the site shall be cut at ground level and the stump left in place.

(7) Certification of Installers.

(a) Mound systems shall be installed by a certified installer.

(b) Certification shall be given to individuals who have successfully completed a course of study and examination in the practice of construction of mound systems. The course and examination shall be administered by the Department of the Environment. The course of study may be waived by the Department if the contractor has successfully installed mounds and demonstrated skill in this work to the satisfaction of the Department.

(c) The course of study and examination shall be given at least once each year by the Department of the Environment.

(See page 221)

H. Non-conventional on-site sewage disposal systems may not be considered as acceptable on-site sewage disposal systems with regard to the subdivision of land pursuant to COMAR 26.04.03.

.07 Special Methods of Sewage Collection and Disposal.

A. Privies shall be located and constructed so as to prevent contamination of ground and surface water. They shall be constructed in such a manner as to be insect and rodent free and to prevent odor nuisances. Location and construction plans shall be approved by the Approving Authority before issuing a sewage disposal construction permit.

B. Chemical toilets shall be constructed of impervious materials; vented to the outside air above the roof line, of the structure housing them, and supplied with an adequate amount of the chemical agent used to reduce and deodorize the tank contents. Chemical toilets shall be used only for special term events and in the abatement of problems.

C. When privies or chemical toilets become filled to recommended capacity, the contents shall be removed and disposed of as provided in Regulation .08 of this chapter.

.08 Scavenging.

All solid and liquid contents of chemical toilets, septic tanks, seepage pits, privies, and watertight holding tanks for septic tank effluent shall be removed when necessary and disposed of in conformance with COMAR 26.04.06.

.09 Variances.

The Department of the Environment may grant variances to area well siting, distances and slope requirements of these regulations; upon the recommendation of the Approving Authority provided that the public health is protected.

.10 Appeal.

A person aggrieved by a final decision of the Approving Authority in a contested case has the right to have the decision reviewed in accordance with the provisions of the Administrative Procedure Act and other applicable statutes and regulations. All appeals shall be filed with the Director, Water Management Administration, within 30 days after notification of the final decision by the Approving Authority.

.11 Penalty.

A person who violates any provision of these regulations shall, upon conviction, be guilty of a misdemeanor and subject to a fine of not less than \$50 and not more than \$100 for each offense. Each day's failure to comply with any provision of these regulations shall constitute a separate violation. The Approving Authority may also seek injunctive relief to enforce provisions of this regulation by initiating appropriate civil proceedings.

.12 Map.

(See map on page 226)

WATER, SEWAGE, AND SOLID WASTE
Administrative History

26.04.02.12

Effective date:

Regulations .01-.05 effective November 16, 1953; amended effective July 1, 1957, November 15, 1957, June 8, 1965, October 15, 1966, April 1, 1967, December 1, 1970

Regulations .01E and .02C amended, .02C-1 adopted effective December 17, 1984 (11:25 Md. R. 2134)

Regulations .06-.16 effective November 16, 1953

Regulation. 17 effective June 1, 1957

Regulations .18-.21 effective November 16, 1953

Regulations .01-.21 repealed and new Regulations .01-.11 adopted effective November 18, 1985 (12:23 Md. R. 2218)

Regulations .01, .02, .04, and .05 amended as an emergency provision effective May 6, 1986 (13:11 Md. R. 1267); emergency status extended at 13:20 Md. R. 2205 (Emergency provisions are temporary and not printed in COMAR)

Regulation .01 amended effective November 3, 1986 (13:22 Md. R. 2398)

Regulation.02 amended effective November 3, 1986 (13:22 Md. R. 2398)

Regulation .04 amended effective November 3, 1986 (13:22 Md. R. 2398)

Regulation .05 amended effective November 3, 1986 (13:22 Md. R. 2398)

Regulation .06 amended effective November 3, 1986 (13:22 Md. R. 2398)

Regulation .11 amended effective November 3, 1986 (13:22 Md. R. 2398)

Map recodified as Regulation. 12

Chapter recodified from COMAR 10.17.02 to COMAR 26.04.02

Regulation .01B amended effective March 25, 1996 (23:6 Md. R. 477)

Regulation.02C and D amended effective April 27, 1992 (19:8 Md. R. 806)

Regulation .03C amended effective March 25, 1996 (23:6 Md. R. 477)

Regulation .04J amended effective July 4, 1994 (21:13 Md. R. 1160)

Regulation .050 and Q amended effective April 27, 1992 (19:8 Md. R. 806)

Regulation.OS amended effective December 10, 1990 (17:24 Md. R. 2837)

Regulation. 10 amended effective October 26, 1992 (19:21 Md. R. 1894)